

Karta przedmiotu

Wydział: Wydział Ekonomii i Stosunków Międzynarodowych
Kierunek: Międzynarodowe Stosunki Gospodarcze

I. Informacje podstawowe

Nazwa przedmiotu	International Statistics	
Nazwa przedmiotu w j. ang.	International Statistics	
Język prowadzenia przedmiotu	angielski	
Kod/Specjalność	WE-MG-IB-X2-13/14Z-INTSTA International Business	
Profil przedmiotu	Ogólnoakademicki	
Kategoria przedmiotu	kierunkowe lub ogólne	
Typ studiów	2. (studia magisterskie)	
Liczba semestrów/semestr	1/1	
Liczba godzin	stacjonarne:	Wykłady: 15 Ćwiczenia: 15
	niestacjonarne:	Wykłady: 9 Ćwiczenia: 9
Liczba punktów ECTS	stacjonarne:	5
	niestacjonarne:	5

II. Wymagania wstępne

Lp.	Opis
1	The International Statistics course is in fact a computer aided course of Statistical Inference or Statistics II. We assume only basic knowledge of probability and descriptive statistics and basic mathematical skills (An introduction to statistics, Descriptive statistics etc.)

III. Cele przedmiotu

Kod	Opis
C1	is aware of a role of the modern statistics in the Economics
C2	is able to conduct a statistical inference process in typical situations in the practice
C3	is able to discuss economic dilemmas within a group using statistical arguments

IV. Realizowane efekty kształcenia

Kod	Kat.	Opis	KEK
E1	W	has advanced general knowledge about major research theories and methods in the field of economic and related sciences	WE-ST2-MG-W01-13/14Z
E2	U	has good understanding of and ability to analyse economic phenomena as well as an ability to carry out in-depth analyses of these phenomena in selected areas based on research methods	WE-ST2-MG-U02-13/14Z
E3	K	is able to identify and cope with dilemmas related to the profession of an economist	WE-ST2-MG-K03-13/14Z
E4	K	assume responsibility for his\her own and collaborators' activities	WE-ST2-MG-K03-13/14Z
E5	W	is well-acquainted with selected description methods and tools including techniques for collecting data and modelling economic structures and processes, and is able to identify relevant principles	WE-ST2-MG-W06-13/14Z

V. Treści Kształcenia

Wykłady

Kod	Opis	S (15)	N (9)
W1	A Brief Introduction to R Program (free statistical software)	1	1
W2	2.1. Introduction to Statistics What is Statistics? Basic Definitions. Population vs. Sample. Types of Variables, Levels of Measurement, Basic Descriptive Measures in One and Multidimensional Case. Data Visualization. Linear Regression and Correlation. Regression for Discrete Data. Nonlinear Regression. Big Data Sets.	2	1
W3	2.2. Introduction to Probability Basic Probability Concepts. Random Variable. Random Vector. Expected Value and Variance. Conditional and Joint Probability. Independence of Events. Rules of Addition and Multiplication. Total Probability. Bayes' Theorem. Conditional Expected Value and Conditional Variance. Mathematical Regression.	2	1
W4	2.3. Discrete Random Variable Probability Mass Function. Cumulative Distribution Function. Distribution Parameters. Chebyshev's Theorem. Bernoulli Distribution. Binomial Distribution. Poisson Distribution. Multinomial Distribution. Negative Multinomial Distribution. 2.4. Continuous Random Variable Probability Density Function. Cumulative Distribution Function. Distribution Parameters. Uniform Distribution. Normal Distribution: Properties, Standard Normal Distribution, Empirical Rule. Exponential Distribution. Beta Distribution. Gamma Distribution.	2	1
W5	2.5. Sampling Distributions Sampling Methods. Random Sample. The Central Limit Theorem. Estimators and Their Properties. Distribution of Sample Mean. Distribution of Sample Variance. Distribution of Sample Proportion.	2	1
W6	3.1 Sampling Random vs. Non-random Sampling. Random Sampling Techniques (Stratified Random Sampling, Systematic Random Sampling, Cluster Sampling). The Representative method. Sampling Errors. 3.2 Introduction to Theory of Estimation Point Estimation. Interval Estimation. Bootstrap Estimation. Parametric vs. Nonparametric Estimation.	3	2
W7	3.3 Optimum methods of estimation Criteria of Evaluation of Estimators. Elements of The Decision Theory. Robust Estimation. 3.4 Test of Significance vs. Bayesian Inference Concepts of Statistical Inference – Pearson-Neyman vs. Bayesian Approach. Errors in Hypotheses testing. Parametric vs. Nonparametric Tests. 3.5 Computational Methods in	3	2

	Statistical Inference Bootstrap Methods. Monte Carlo Methods. Markov Chain Monte Carlo Methods.		
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Ćwiczenia

Kod	Opis	S (15)	N (9)
C1	1. A Brief Introduction to R	5	3
C2	2. Basic Notions of the Probability and Statistics 2.1 Introduction to Statistics 2.2 Introduction to Probability 2.3 Discrete Random Variable 2.4 Continuous Random Variable 2.5 Sampling Distributions	5	3
C3	3. Elements of Statistical Inference 3.1 Sampling 3.2 Introduction to Theory of Estimation 3.3 Optimum Methods of Estimation 3.4 Test of Significance vs. Bayesian Inference 3.5 Resampling Methods in Statistical Inference	5	3

VI. Metody i formy prowadzenia zajęć

Kod	Opis
N1	Wykład audytoryjny
N2	Konwersatorium
N3	Prezentacja
N4	Dyskusja
N11	E-learning
N13	Ćwiczenia laboratoryjne

VII. Sposoby oceny

Oceny bieżące (formujące)

Kod	Opis
F1	Kolokwium
F8	Aktywność na zajęciach
F9	Ćwiczenie praktyczne

Sposób obliczania średniej z ocen bieżących (zgodnie z §18 pkt. 4 Regulaminu studiów)

three quizzes + activity = 50 points = class note